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ABSTRACT

A self-administered survey was given to 152 college students to test their knowledge and understanding of some basic health facts and terminology commonly found in printed materials affixed to or accompanying common over-the-counter (OTC) drug preparations. The results indicated that 96% of the sample had used OTC medications as college students. The students named approximately 131 different products by brand name. One exception was aspirin, which was indicated as either aspirin or by trade name. Some mistook prescription drugs, such as Valium, for OTC products. A number of questions asked students either to supply or to recognize an acceptable interpretation of terms commonly found on OTC product labels, such as "prolonged use," "sodium restricted diet," and "antihypertensives." While the majority gave acceptable answers, some gave responses indicating that they did not understand the terms. When asked to name the source of information about OTC products, only 6% named health professionals, while most named the media and family as sources. Although most reported choosing their medications based solely upon their own knowledge or the advice of nonprofessionals, 8% admitted taking OTC medications either without reading any of the directions, warnings, or cautions, or reading only for the dosage amount. (HTH)

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Rx FOR OTC USERS: IMPROVED HEALTH EDUCATION

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RE: FOR OTC USERS: IMPROVED HEALTH EDUCATION

Self-medication using non-prescription or over-the-counter (OTC) drugs merits increased attention from health educators. Although the general public is prone to think of drugs as illicit substances bought and used surreptitiously, the term also encompasses possibly 300,000 over-the-counter medicines containing 500 significant active ingredients.¹ Health educators are now faced with the task of alerting and informing students of the possibility of risk if these OTC drugs are not chosen and ingested with care.

In contrast to illegal drugs, OTC medicines are low in cost, widely available, advertised in all media to the saturation point, and fulfill legitimate needs of decent, law-abiding citizens. Society places few moral or ethical restrictions on their use; indeed this use is usually taught by example in the home. There are inherent dangers, however, in OTC's commonplace qualities and wide acceptance, as the possibilities for careless or misinformed use are thereby magnified.

In a 1978 Journal of School Health article, Shirreffs supported the role of health educators in preparing individuals to assume primary responsibility for their general wellbeing.² The four years which have passed since the publication of that article have brought this need into even sharper focus. The proliferation of OTC drug use seems to justify concerted time and effort being spent on preparing young people to be intelligent consumers of proprietary medicines and possible disseminators of information to out-of-school family members and acquaintances.

A perusal of the literature dealing with OTC medicines reveals that many people are presently self-medicating, that they may not attempt to read or follow instructions, that they sometimes misuse OTC products, and that they may lack basic knowledge or reading skills which would enable them to self-medicate safely.

A succession of studies have found that OTC drug use is widespread. A survey of 2603 Kaiser Health Plan subscribers found that nine out of ten interviewees reported taking OTC medicines.³ In a survey of 234 randomly selected households, Knapp and Knapp found that 84% had procured OTC drugs during the monitored 30-week period. These families had in their possession an average of about 17 OTC drugs per household, and over 70% of their illnesses were treated with OTC products.⁴

Americans do not appear to be sufficiently careful about reading and following instructions. Reports from studies ranging over a period of ten years and including both OTC and prescription medicines cite inadequate reading of and/or compliance with directions. For example, a 1974 survey found 18% of consumers usually do not read the label information on an OTC product.⁵ An FDA study of 576 Bostonians, cited by Hecht in 1976, found that 16% of their group did not read OTC product labels although 75% agreed that it was important to do so.⁶

Two related studies dealing with prescription medicines might be noted here. Whereas one would expect a higher degree of compliance when there is intervention of a health professional, a Rochester Medical Center survey found that 51% of its outpatients did not follow instructions even when particular prescription directions were chosen for testing based on their clarity. Furthermore, the frequency of error ranged from nine (9) to 64%.⁷ A later article quoted reviewers of a series of compliance studies dealing with prescription products as reporting that of patients taking medicines for chronic ailments, an overall average of about 46% were not following directions.⁸ The FDA now

estimates that "more than half of all patients take their prescriptions erratically or give them up too soon."⁹

In "A Review of Over-the-Counter Drug Therapy," a series of instances of specific consumer misuse were cited including overuse as to length of time, overdosing, and the combination of OTC drugs with prescription medicines, or with alcohol.¹⁰

A contributing factor to OTC product misuse may be that the vocabulary and structure requirements posed by existing labels do not meet with matching language skills on the part of possible consumers. Health educators are no doubt familiar with findings from the Office of Education study¹¹ which revealed that over half of America's adults barely have skills sufficient to function in today's complex society; and, that approximately 30% are incompetent at everyday consumer tasks equivalent to or including reading and following instructions on OTC labels.¹²

In a test specifically designed to measure the understanding of three student groups (graduate, secondary and junior high) concerning 14 terms commonly used on OTC labels, Pyrczak found that 20% of the secondary sample could not match "chronic" with its simple definition on a two-item test. Furthermore, although mean scores were generally high, there were individuals in the secondary and junior high groups who would be at risk if they attempted to self-medicate.¹³

Health and medical-related publications evince a sense of uneasiness and concern regarding unrestricted OTC use in part because of these recognized language difficulties. Experts in the fields of psychology and linguistics have testified as to the difficulty of choosing universally acceptable and understood terminology for labeling and directions when the audience is both diverse and often untutored.¹⁴ The present study was designed to sample one

group's knowledge and understanding of some basic health facts and terminology commonly found in printed materials affixed to or accompanying common OTC drugs. Some of this terminology assumes that the potential consumer is familiar with body norms; other instances use medical terms to refer to illnesses, ailments, and conditions which might or might not be understandable to a given purchaser.

Methods

A group of 152 college students who were enrolled in communication classes at a southern university during the winter of 1980-81 were selected for the study. Although this design did not constitute a random sampling, communication courses draw students from virtually every school throughout the university. Furthermore, the class standing of students in these courses are generally mixed; of the 152 students found in the classes at the time of the survey, 28% were freshmen; 28% were sophomores; 21% were juniors; 20% were seniors; and 5% had graduate standing.

The testing tool was a self-administered survey. This instrument gathered non-parametric nominal data which was used to determine the perceptions, knowledge, and related behaviors regarding primarily OTC medicines.

Results

This diagnostic survey revealed some interesting findings. Most of the questions regarding drug practices were devised in response to the labels or printed materials accompanying OTC products, which had previously been identified as in use by college students in a pre-pilot survey. Of the approximately 20 questions dealing with drug use, several were relevant to this article.

Ninety-six percent (96%) of the sample had used OTC medications as college students. These students named approximately 131 different products by brand. One exception was aspirin; while some indicated "Bayer" or "Norwich" aspirin,

others just said "aspirin." Another exception was the inclusion of prescription drugs (such as Valium) which students apparently mistook for OTC products. This list of 131 medications was elicited by naming 13 minor complaints, supplying blanks for others to be included, and asking that students name the OTC products they had taken for these conditions. The number of different OTC medicines taken by an individual student ranged from 0 to 19, with the average being five. The most commonly ingested products were aspirin (indicated either by generic or brand name) and Tylenol. Eighty percent (80% of the respondents had taken prescription medicines since becoming college students; 18% sometimes "borrowed" prescriptions, and almost three percent (3%) had taken only "borrowed" prescriptions.

A number of questions asked students either to supply or recognize an acceptable interpretation of terms commonly found on OTC product labels. These terms were "sodium restricted diet," "prolonged use," "persistent cough," "high fever," "prostate gland trouble," and "anti-hypertensives." While a majority of subjects usually gave acceptable answers, there were instances where responses indicated that individuals might jeopardize their well-being.

For example, 20% of the respondents could not match "sodium-restricted diet" with its accompanying definition, "not much salt." Sixty-one percent (61%) considered taking OTC products labeled "not for prolonged use" for up to eight days acceptable. Thirty-one percent (31%) named a longer time, i.e., from nine to 15-plus days. In a question designed to elicit respondents' perception of reasonable time for an OTC product to alleviate a cough before calling a physician, about 50% gave answers which might indicate risk-taking behavior, i.e., ranging from as much as one to four weeks. Thirty-seven percent (37%) would describe only levels as high as 102 degrees or above as "high fever" in connection with the sentence, "Persons with high fever should not use this

preparation. . . ." Nine percent (9%) would restrict product ingestion in this respect only when their temperature reached 103 or 104 degrees. An additional one or two percent (1 or 2%) either answered "I don't know" or did not respond.

Many OTC products include on their labels the warning, "Do not take if you have a history of prostate gland trouble." Forty-four percent (44%) of the respondents could not associate this term with its symptom of "difficulty in urination." Twenty-four percent (24%) associated the term with "difficulty having a bowel movement" and eight percent (8%) with "difficulty in regulating menstrual periods." When given choices as to age categories and sex, 38% could not match the ailment with "older males."

Because of the many labels which advise caution regarding ingestion of OTC medicines in combination with anti-hypertensives, respondents were asked to match this term with "medicines prescribed for high blood pressure." Twenty-two percent (22%) were unable to connect this term with its definition.

Upon being asked to name the source of information about OTC's, only six percent (6%) named health professionals. The remainder cited a variety of sources, usually including the media and family. And finally, although most reported choosing their medications based solely upon their own knowledge or the advice of nonprofessionals, eight percent (8%) admitted taking OTC medicines either without reading any of the directions, warnings, or cautions, or reading only for the amount of the dose.

Discussions

The lack of information, misinformation, or careless practices revealed by these answers becomes alarming when one considers that this audience was a select one; respondents were probably better students in elementary, junior high, and secondary school; they had either successfully completed a year or

more in a junior college or had achieved a 15 on the ACT test to gain entry into the university. Furthermore, 72% had higher than freshman class standing. Some students in even this advantaged group apparently had received inadequate health instruction.

Professional health educators will probably register little surprise at students' lack of preparation for self-administered health care. Present public school programs often do not provide for health educators to have sufficient access to all students in the classroom situation. Some courses taught at the junior high level have been non-demanding; an additional few hours tucked into the Home Economics or Physical Education classes may exhaust the school's health instruction.

Furthermore, health instruction content may not meet with students' perceived needs or interests. A 1980 Journal of Drug Education article reports, for example, that previous studies involving high school drug information classes in different geographic areas found that those classes either had been given low ratings by students or determined to meet few students' concerns. In a college-level seminar on drug use reported on in the same article, voluntary participants composed 541 questions regarding drugs which they considered to be representative of those which college students have about drugs. OTC drugs elicited the third largest number of questions (77) which were more specifically concerned with effects, regulations, and hazards. The study concluded that existing college courses, like those secondary classes referred to, did not seem to correspond with the areas identified as important to the sampled student respondents.¹⁵

A majority of health educators would probably agree that a passing grade in a health education course including drug consumerism should be mandatory in the secondary schools. Two courses, one at junior and one at senior high

level might be preferable, due to the possibility of dropouts occurring after junior high school. At the college level, a competency test similar to those used to ascertain entering students' language skills might also be used to certify as to their ability to assume primary responsibility for their own health maintenance, or to identify those individuals who need further instruction.

Conclusion

There are compelling reasons for an attempt at an immediate turn-around in some health education course content, quality, and emphases. The American public is now spending between four and eight billion dollars per year on self-prescribed and self-administered drugs for self-diagnosed illnesses.¹⁶ With these burgeoning sales of OTC's, the possibility of misuse grows and the abilities of health educators will be challenged as never before.

The reading skills of today's adults are not likely to improve in and of themselves. The presently available statistics regarding comprehension and label information utilization, since usually self-reported, may be falsely encouraging.¹⁷ The preponderance of drug-consumerism and health information instruction must take place in the public schools where specific vocabulary and factual knowledge needs to be taught. Out-of-school adults, although more difficult to educate, may be reached through special club and organization programs, classes, media promotions, billboards, etc.

Some risk-taking behaviors in connection with OTC ingestion may deserve crisis meeting tactics. Americans need to be alerted to their genetic predisposition to hypertension¹⁸ along with the large number of OTC products which are contraindicated when the condition is present or when it is being treated with prescription drugs. Special care must be taken to insure that students understand the hazards of certain drug combinations, drug and food combinations,

and drug and alcohol combinations. For example, the ease with which one can ingest a possibly lethal dose of acetaminophen by taking the assigned dose of cough medicine, cold tablets, a sleeping preparation and sinus tablets in combination is probably unrecognized by the general public.¹⁹ The hazards to nursing infants presented by OTC products, as common as some laxatives, needs to be disseminated so that those not under a physician's care will not endanger their children.²⁰

In general, the published reports and the information gleaned from this study point up the lessening reliance on professional advisors and a greater need for specific knowledge on the part of lay persons. The preponderance of evidence seems to indicate that additional research should be conducted and hard data assembled which will pin-point specific needs on the part of target audiences. The application for and awarding of grant funds for revealing these needs, designing high quality courses, and preparing a talented and resourceful cadre of health educators to direct major programs seem justified. The pressures to self-medicate such as the rising costs of time and money needed to consult health professionals for diagnosis and treatment are not likely to diminish in the foreseeable future.

Localized health care knowledge needs cannot of course be generalized from the restricted study reported on here. The findings, however, should lend impetus to health educators' efforts to determine and attack needs in their own areas.

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